

WHAT IS CLAIMED IS:

1. A device for measuring a frequency of a measured signal, said device comprising:

counting means including a plurality of n-nary counters; and

gate means for supplying the measured signal to an input of said respective n-nary counters in order at given time intervals;

wherein a frequency measurement result of the measured signal is supplied from said counting means every given time interval.

2. A method for measuring the frequency of a measured signal, said method comprising the steps of:

providing counting means including a plurality of n-nary counters; and

supplying the measured signal to an input of said respective n-nary counters in order at given time intervals;

wherein a frequency measurement result of the measured signal is supplied from said counting means every given time interval.

3. A device for measuring the frequency of a measured signal, comprising:

a counting section including a number i ($i \geq 2$) of n-nary counters;

a time reference circuit that outputs a time reference signal, a duration of which is t , every time interval p ; and

a number i of gate circuits respective outputs of which are connected to the inputs of said i n-nary counters, each of said i gate circuits having a first input that receives the measured signal, and a second input that receives the time reference signal at the time interval p ;

wherein the frequency measurement result of the measured signal is supplied from said counting sections every time interval p .

4. A device as claimed in claim 3, wherein $t = i \cdot p$.

5. A polishing apparatus comprising:

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a turn table having a polishing surface;
a top ring for holding an object to be polished;
and an end point detecting mechanism for informing an
end point of polishing,

said end point detecting mechanism comprising:
counting means including a plurality of n-nary
counters; and

gate means for supplying the measured signal to an
input of said respective n-nary counters in order at given
time intervals;

and a frequency measuring device for supplying a
frequency measurement result of the measured signal from
said counting means every given time interval.

6. A polishing method for informing an end point of
polishing of an object to be polished by a turn table
having a polishing surface, said method comprising:

providing counting means including a plurality of
n-nary counters; and

supplying the measured signal to an input of said
respective n-nary counters in order at given time
intervals;

wherein a frequency measurement result of the
measured signal is supplied from said counting means every
given time interval.

7. An eddy current sensor for detecting the thickness of
an electrically conductive film from a change in an eddy
current loss generated in said conductive film, said sensor
comprising:

a sensor coil for generating an eddy current in said
conductive film; and

an active element unit for oscillating a variable
frequency corresponding to said eddy current loss;

wherein said sensor coil and said active element unit
are formed integrally.

8. An eddy current sensor according to claim 7, wherein
said oscillating frequency generated by said active element
unit is in a VHF band.

9. An eddy current sensor according to claim 7, wherein

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an eddy current sensor disposed below or above said substrate for measuring the thickness of a conductive film formed on said substrate, said sensor coil being configured to detect a change in the thickness of said conductive film based on a change in a resistance component in an impedance formed by said sensor coil and said conductive film.